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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/037,043

Filing Date: November 09, 2001

Appellant(s): MITCHELL ET AL.

William Lee Jr., Reg. No. 26935
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/05/2008 appealing from the Office action
mailed 09/04/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US Publication 2002/0114322	Xu	August 22, 2002
US Publication 2003/0009561	Sollee	January 9, 2003
IETF Working Document 'MIDCOM Scenarios' by Huitema , May 17, 2001		
IETF Working Document 'MIDCOM Architecture and Framework', by Srisuresh, February 2001		
IETF 'RFC2327 SDP : Session Description Protocol', Handley , April 1998		
US Publication 2002/0152325	Elgebaly	October 17, 2002
US Publication 2003/0055978	Collins	March 20, 2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,6-12, 15-16, 18-19, 23-25, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US Publication 2002/0114322) hereinafter referred to as Xu, in view of Huitema (IETF Working Document 'MIDCOM Scenarios'), further in view of Sollee (US Publication 2003/0009561).

With respect to Claim 1, Xu discloses a method of controlling one of a plurality of NAT/Firewalls in a communications network, each of the NAT/Firewalls being connected to a plurality of entities in a respective one of a plurality of address realms of the communications network, (Figures 1-2B) said method comprising the steps of:

(i) receiving a control message at a identity-providing node (Figure 1, Items 14a, Item 14b, and Item 20) in the communications network, said control message comprising information about one of the nodes in the communications network; (Page 4 Paragraph 49)

(iii) sending said identity of node to a NAT/Firewall control node (Xu- 'CCM Server', Page 5 Paragraph 52-55, Page 8 Paragraph 94-97) in the communications network in order to enable said NAT/Firewall control node to send control messages to said first NAT/Firewall ; said NAT/Firewall control node being located in a different address realm than that of said one of the entities;

and wherein the identity-providing node (Items 14a , 20) is separate from the NAT/Firewall control node (Item 18) and located in a control signal path from said one

of the entities to the NAT/Firewall control node. (Page 5 Paragraph 52-55, Page 8 Paragraph 94-97)

Xu did not disclose (re. Claim 1) a middlebox device in the network.

Xu did not disclose (re. Claim 1) using the identity-providing node to determine the identity of a first NAT/Firewall connected to said one entity in its respective one of the plurality of address realms; and send said identity of the NAT/firewall to the control node.

Huitema disclosed (re. Claim 1) that a middlebox may be a NAT inside a private network. (Huitema - Page 1, Abstract) Thus, the middlebox described in Claim 1 is equivalent to the NAT/Firewall disclosed by Xu.

Huitema disclosed of different scenarios for describing the MIDCOM protocol as used for devices in the network that provide transport policy enforcement. Huitema disclosed that examples of said 'policy enforcement' devices include firewall and network address translators, such devices being a subset of what are otherwise referred to as 'middleboxes'. (Huitema - Page 1, Abstract) Huitema also disclosed (re. Claims 4,5,20,21) that session description protocol (SDP) messages may be used to initiate and facilitate the communication control process between the middleboxes and the other devices involved. The SDP messages may include identification information

regarding the middlebox.(Huitema – Page 13, Section 2.3.6 Multiple Ports, Port Ranges)

Xu and Huitema are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls.

At the time of the invention it would have been obvious to combine the teachings on middleboxes and SDP messages by Huitema into Xu . The combination of Huitema into the network of Xu would 1) enable the devices in the network to communicate and pass identification information using the SDP messages, and 2) enable the Call Control Manager (CCM) server of Xu to recognize and control the NAT/firewall as a 'middlebox'. The suggested motivation for said combination would be, as Huitema suggests, enable the network of Xu to 1) allow for third parties to provide transport policy enforcement, and 2) overcome the traversal scenarios that Huitema describes.

(Abstract, Introduction)

Sollee disclosed (re. Claim 1) a media portal (Sollee-Paragraph 91) that acquires the public address of the corresponding NATs (Sollee-'Border system',Paragraph 20) that are required for media session between clients behind a NAT/firewall. After acquiring said NAT addresses, the media portal propagates the NAT addresses to the call processing module in the application server, (Sollee-Paragraph 109, Figure 5, Step 410) and establishes a mapping table for the corresponding NATs.

The Examiner notes that the media portal by Sollee is equivalent to a middlebox-identity-providing node because the media portal acquires the public address of the NATs and forwards the public address of the NATs to a call control module.

Xu,Huitema and Sollee are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls. At the time of the invention it would have been obvious to combine Sollee into Xu-Huitema such that the public address of the NATs are identified prior to the exchange of media packets. The motivation for said combination would have been (Sollee-Paragraph 9) so that the NAT/firewalls do not need to be aware of the underlying protocols used for the communication session.

The Examiner notes that given Xu's intent to gather endpoint information at the proxy server and propagate said endpoint information to the CCM, it would have been obvious to modify Xu's proxy server to include the public address of the NAT and create a mapping table at the CCM server so that Xu's CCM server is made aware that the clients are sitting behind a firewall.

With respect to Claim 2, Xu-Huitema-Sollee discloses a method as claimed in claim 1 wherein said step (iii) of sending said identity comprises adding said identity to a

control message and sending said control message. (Sollee-Paragraph 109, Figure 5, Step 410)

With respect to Claim 3, Xu-Huitema-Sollee discloses a method as claimed in claim 2 wherein additional information is also added to the control message. (Sollee-Paragraph 92-103)

With respect to Claim 6, Xu-Huitema-Sollee discloses a method as claimed in claim 1 wherein said control message is a call set-up message and said method is arranged to control said first NAT/Firewall in order to set-up a call from said one entity to another entity connected to a second NAT/Firewall in the communications network. (Xu-Page 4 Paragraph 51, Page 5 Paragraph 61-64)

With respect to Claim 7, Xu-Huitema-Sollee discloses a method as claimed in claim 6 wherein said second NAT/Firewall is connected to a plurality of entities in a second address realm different from the first address realm of the entities connected to the first NAT/Firewall . (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 8, Xu-Huitema-Sollee discloses a method as claimed in claim 7 wherein the NAT/Firewall control node is within a third address realm different from the first and second address realms. (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 9, Xu-Huitema-Sollee discloses a method as claimed in claim 8 wherein the third address realm is public. (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 10, Xu-Huitema-Sollee discloses a method as claimed in claim 9 wherein the first and second address realms are private. (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 11, Xu-Huitema-Sollee discloses a method as claimed in claim 1 wherein the NAT/Firewall -identity-providing node is selected from: one of the NAT/Firewalls; a gateway in the communications network; said one entity, being a user terminal in the communications network; a gateway comprising a business services channel manager (BSCM). (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 12, Xu-Huitema-Sollee discloses a method as claimed in claim 6 wherein said call passes through two or more NAT/Firewalls and wherein information about the identity of each such NAT/Firewall is added to said control message. (Sollee-Paragraph 155-166)

With respect to Claim 15, Xu-Huitema-Sollee discloses a method as claimed in claim 1 wherein each of the NAT/Firewall is selected from, a firewall, a network address translator (NAT), and a quality of service device . (Xu-Figure 1, Page 4 Paragraph 41)

With respect to Claim 16, Xu-Huitema-Sollee discloses a method as claimed in claim 1 wherein said NAT/Firewall-identity-providing node is arranged to determine the identity of the first NAT/Firewall by using pre-specified information. (Sollee-Paragraph 155-166)

With respect to Claims 18-19, the Applicant describes a communications network having the same limitations as described in Claims 1-12, 15-16. Claims 18-19 are rejected on the same basis as Claims 1-12, 15-16.

With respect to Claims 23, the Applicant describes a control node with the same limitations as described in Claims 1-12, 15-16. Claims 23 is rejected on the same basis as Claims 1-12, 15-16.

With respect to Claims 24 the Applicant describes a identity-providing node with the same limitations as described in Claims 1-12, 15-16. Claims 24 is rejected on the same basis as Claims 1-12, 15-16.

With respect to Claim 25, Xu-Huitema-Sollee disclosed a computer program arranged to control a NAT control node, said NAT control node (Xu – Figure 1 Item 18) comprising an input arranged to receive a control message (Xu – Paragraph 49) comprising information about the identity of one of the NATs; (Sollee-Paragraph 109, Figure 5, Step 410)

and a processor arranged to issue messages to the identified NAT in order to control it; such that in use the NAT control node is able to control the identified NAT without the need to maintain its own store of information about the identities of the NATs and without the need to maintain its own discovery mechanism to discover the identities of the NATs; the computer program comprising program code executable by the processor in order to enable the NAT control node to: - receive a control message comprising information about the identity of one of the NATs; (Sollee-Paragraph 109, Figure 5, Step 410) and

to issue messages to the identified NAT in order to control it. (Xu – Paragraph 52-55, Paragraph 94-97)

With respect to Claim 27, Xu-Huitema-Sollee disclosed a computer program arranged to control a NAT identity-providing node, said NAT identity providing node (Sollee-Paragraph 91) comprising an input arranged to receive a control message comprising information about one of a plurality of entities in the communications network; (Sollee-Paragraph 91) a processor arranged to determine the identity of a first NAT connected to said one entity; and an output arranged to send said identity to a NAT control node in the communications network: (Paragraph 49) and wherein said NAT-identity providing node is arranged to be closer in said communications network to said one of the entities than the NAT control node: the computer program comprising program code executable by the processor in order to enable the NAT identity-providing node to receive a control message comprising information about one of a plurality of entities in the communications network; (Paragraph 49) to determine the identity of a first NAT connected to said one entity; and send said NAT identity to a NAT control node in the communications network. (Paragraph 52-55, Paragraph 94-97)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4,5,20,29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US Publication 2002/0114322) hereinafter referred to as Xu, in view of Huitema (IETF Working Document 'MIDCOM Scenarios'), further in view of Sollee (US Publication 2003/0009561) and further in view of Handley et al. (IETF Working Document RFC2327 'SDP:Session Description Protocol'), hereinafter referred to as Handley .

The combination of Xu-Huitema-Sollee did not disclose (re. Claims 4,5,20,29) using the SDP protocol for passing session initiation information.

The combination of Xu-Huitema-Sollee did not disclose (re. Claim 29) wherein the first middlebox is arranged to act as two or more independent middleboxes and wherein the step of providing the identity of the first middlebox to the middlebox control node comprises providing the identity of the first middlebox and the identity of a particular middlebox functionality relating to one of said two or more independent middleboxes that is to be used.

The Examiner notes that regarding '*two or more independent middleboxes*', the courts have ruled that mere duplication of parts has no patentable significance unless a new and unexpected result is produced. Thus, this limitation is interpreted to mean a singular middlebox that is able to perform the functions of two middleboxes.

Handley disclosed (re. Claims 4,5,20) of the Session Description Protocol including specifications for passing pre-defined attributes regarding the session and media involved in the session. The 'attribute' mechanism ("a=" described below) is the primary means for extending SDP and tailoring it to particular applications or media. Some attributes (the ones listed in this document) have a defined meaning but others may be added on an application-, media- or session-specific basis.(Handley - Section 6 – SDP Specification)

The Examiner notes (re. Claim 29) that it would have been well known in the art that the SDP 'attribute' mechanism allows for application-specific control information, and thus would have enabled the middlebox to distinguish the different functionalities required for the session.

Xu-Huitema-Sollee and Handley are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls. At the time of the invention it would have been obvious to combine the teachings regarding pre-defined attributes mechanisms on SDP messages by Handley into the combined teachings of Xu-Huitema-Sollee. The said combination of Handley into the combined network of Xu-Huitema-Sollee would facilitate sending the identity information from the middlebox to the other devices in the network. The suggested motivation for combining would have been, as Handley suggests, in order to have a standard format for session initiation-related information, using text in the ISO 10646 character set in UTF-8 encoding for enhanced portability. The encoding was

designed with strict order and formatting rules so that most errors would result in malformed announcements which could be detected easily and discarded. This also allows rapid discarding of encrypted announcements for which a receiver does not have the correct key. (Section 6 – SDP Specification)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US Publication 2002/0114322) hereinafter referred to as Xu, in view of Huitema (IETF Working Document 'MIDCOM Scenarios'), further in view of Sollee (US Publication 2003/0009561), further in view of Srisuresh et al. (IETF Working Document 'Middlebox Communication Architecture and Framework'), hereinafter referred to as Srisuresh.

With respect to Claim 13, the combination of Xu-Huitema-Sollee do not disclose a method as claimed in claim 1 wherein said NAT/Firewall control node is a MIDCOM agent.

Srisuresh discloses the MIDCOM Architecture and Framework wherein the middlebox controlling node is called a MIDCOM agent. Srisuresh discloses said agents to be nodes external to a middlebox, possessing a combination of application specific intelligence and knowledge of middlebox function so as to assist the middleboxes to perform their functions. (Section 4.0 MIDCOM Agents)

Xu-Huitema-Sollee, and Srisuresh are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls. At the time of the invention it would have been obvious to combine the teachings on MIDCOM agents by Srisuresh into the combination of Xu-Huitema-Sollee. The combination of Srisuresh into the network of Xu-Huitema-Sollee would 1) allow the CCM server to be enabled as a MIDCOM agent. The suggested motivation for doing so would have been, as Srisuresh suggests, to take advantage of existing in-path and out-of-path devices that already possess the application intelligence. (Section 4.1.1 In-Path MIDCOM Agent Illustration)

Therefore it would have been obvious to combine Srisuresh into the combination of Xu-Huitema-Sollee in order to arrive at the invention as described in Claim 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US Publication 2002/0114322) hereinafter referred to as Xu, in view of Huitema (IETF Working Document 'MIDCOM Scenarios'), further in view of Sollee (US Publication 2003/0009561) further in view of Elgebaly et al. (US Publication 2002/0152325), hereinafter referred to as Elgebaly .

With respect to Claim 17, the combination of Xu-Huitema-Sollee do not disclose a method as claimed in claim 1 wherein said middlebox-identity-providing node is arranged to determine the identity of the first middlebox by automatically analysing the communications network.

Elgebaly discloses of communication protocol for NAT type devices, wherein the receiver of protocol data are configured to inspect endpoint values. If an embedded address is non-routable, NAT has been detected. (Page 2 Paragraphs 19-20, Paragraphs 23-27, Page 4 Paragraph 45-47)

Xu-Huitema-Sollee and Elgebaly are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls.

The Examiner respectfully suggests that at the time of the invention it would have been obvious to combine the teachings on detecting NAT devices by Elgebaly into the combination of Xu-Huitema-Sollee. The combination of Elgebaly into the combination of Xu-Huitema-Sollee would 1) other device in the network to detect the NAT device and determine the NAT device identification information. The suggested motivation for doing so would have been, as Elgebaly suggests, in order to overcome shortcomings for certain protocols when used in conjunction with NAT devices. (Page 1 Paragraph 4-6)

Therefore it would have been obvious to combine Elgebaly into the combination of Xu-Huitema-Sollee in order to arrive at the invention as described in Claim 17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 30,31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US Publication 2002/0114322) hereinafter referred to as Xu, in view of Huitema (IETF Working Document 'MIDCOM Scenarios'), further in view of Sollee (US Publication 2003/0009561), further in view of Collins (US Publication 2003/0055978) hereinafter referred to as Collins.

Xu-Huitema-Sollee do not disclose (re. Claims 30,31) a discovery algorithm to automatically obtain information about the identity of middleboxes in the communications network.

Collins disclosed (re. Claims 30,31) pre-established mappings between the NAT devices and the local nodes connected behind the NATs. (Collins-Paragraph 31)

At the time of the invention it would have been obvious to combine the teachings on detecting NAT devices by Collins into the combination of Xu-Huitema-Sollee. The motivation for said combination would have been, as Collins suggests (Paragraph 05), to overcome limitations with NATs arising from outside-initiated traffic flow.

(10) Response to Argument

The Applicant presents the following argument(s) regarding prior art by Sollee [*in italics*]:

Sollee [does not disclose] that a media portal, disposed between an NAPT module and an application server, acquires the public address of the corresponding NATs and propagates them to the application server...Thus it can be seen that application server 1 provides the first media portal with the NAPT identity for the first enterprise device and the second application server provides the second media portal with the NAPT identity for the second enterprise device.

The Examiner notes that the Applicant Specifications indicate (Applicant Specifications Page 10) that '*In the case that the middlebox is a NAT the identity may be the IP address of the public side of the NAT*', thus it would be obvious to person of ordinary skill in the networking art that the *middlebox-identity-providing node* is equivalent to any entity that provides *the IP address of the public side of the NAT*.

Sollee Paragraph 76 disclosed a firewall/NAPT module that is equivalent to a *middlebox* . Sollee Paragraph 105 disclosed that an NAPT identity is used to describe a firewall/NAPT module, said NAPT identity comprising a public NAPT address.

Sollee disclosed a media portal for allocating and storing the public NAPT address (Sollee-Paragraph 107) in response to a MGCP CreateConnection message. Sollee disclosed the X+NAPTAAddress parameter for assigning public NAPT addresses.

The Examiner notes that while Sollee does not explicitly disclose wherein the media portal is sending the public NAPT address to another entity, it would have been obvious to do so in view of what was well-known in the networking art as described below.

The Examiner notes that the concept of storing the external/public address of a NAT at an independent/3rd party node and providing the external/public address of a NAT to communication nodes was well-known in the networking art. (See Molitor, US Patent 6661799, Column 8 Lines 65 thru Column 9 Lines 45, 'address manager' , Column 14 Lines 30-50)

Furthermore it was well-known in the networking art that, in the context of communication between different address realms with firewalls/NATs, the public address of the NAT is required to enable sessions between nodes in the said address realms. (See Molitor, US Patent 6661799, Column 3 Lines 55-65, '*externally valid addresses are the only IP addresses the Global Internet can use to deliver packets to the target organization with the NAT*').

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. An exemplary rationales that may support a conclusion of obviousness is that

of '*applying a known technique to a known device (method, or product) ready for improvement to yield predictable results.*'

The Examiner notes that given Xu's intent to gather endpoint information at the proxy server and propagate said endpoint information to the CCM, it would have been obvious to modify Xu's proxy server to include the public address of the NAT and create a mapping table at the CCM server so that Xu's CCM server is made aware that the clients are sitting behind a firewall. It would be similarly obvious that having acquired said NAT information the CCM server would use and propagate the registered information for future call setup functions because the public address of the NAT is required to enable sessions between nodes in the said address realms.

Thus it would have been an obvious variation of the Xu-Huitema-Sollee to use the media portal by Sollee to send the public NAPT address ('middlebox identity') to the Call Control Manager server (CCM) by Xu in view of what was well-known in the networking art. The motivation for said combination would have been to allow for efficient peer-to-peer communications between different address realms without burdening the communication nodes with complex address translation rules as suggested by Molitor (Molitor-Column 7 Lines 55-65).

The Applicant presents the following argument(s) regarding prior art by Xu [*in italics*]:

'...one skilled in the art would not contemplate combining the disclosures of Xu and Huitema never mind adding Sollee to the mix... The fact that Xu, Huitema and Sollee are analogous art is not in itself sufficient grounds to motivate one skilled in the art to combine the disclosures of these references to arrive at the claimed invention.

The Examiner respectfully disagrees with the Applicant. As presented in the rejection, Xu and Huitema are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls.

At the time of the invention it would have been obvious to combine the teachings on middleboxes and SDP messages by Huitema into Xu. The combination of Huitema into the network of Xu would 1) enable the devices in the network to communicate and pass identification information using the SDP messages, and 2) enable the Call Control Manager (CCM) server of Xu to recognize and control the NAT/firewall as a 'middlebox'. The suggested motivation for said combination would be, as Huitema suggests, enable the network of Xu to 1) allow for third parties to provide transport policy enforcement, and 2) overcome the traversal scenarios that Huitema describes. (Abstract, Introduction)

With respect to Sollee, the Examiner notes that the media portal by Sollee is equivalent to a middlebox-identity-providing node because the media portal acquires the

public address of the NATs and forwards the public address of the NATs to a call control module.

Xu,Huitema and Sollee are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls. At the time of the invention it would have been obvious to combine Sollee into Xu-Huitema such that the public address of the NATs are identified prior to the exchange of media packets. The motivation for said combination would have been (Sollee-Paragraph 9) so that the NAT/firewalls do not need to be aware of the underlying protocols used for the communication session.

The Examiner notes that given Xu's intent to gather endpoint information at the proxy server and propagate said endpoint information to the CCM, it would have been obvious to modify Xu's proxy server to include the public address of the NAT and create a mapping table at the CCM server so that Xu's CCM server is made aware that the clients are sitting behind a firewall.

The Applicant presents the following argument(s) regarding prior art by Xu [*in italics*]:

the Examiner's characterization of what Xu does and does not teach is not entirely accurate and, in fact, contradicts the content of the expert opinion provided with the response to the office action mailed August 9, 2006.

The Examiner has respectfully considered the arguments presented in light of the Applicant expertise in the field.

Taken as a whole, it appears to the Examiner that the central argument regarding Xu is that there is no other entity providing the identity of the NAT ('middlebox') to the CCM ('middlebox control node'), except the NAT themselves, hence the *middlebox-identity-providing node* is missing from Xu. As may be gleaned from the expert testimony from the Applicant, all the conditions and structural elements identified by the Applicant as essential to Claim 1 (see Declaration, pages 2-3) are present in Xu, with the exception of said '*middlebox-identity-providing node*'.

As presented by the Applicant the following questions must be answered affirmatively in order for the prior art to disclose the essential elements of Claim 1:

1) Is the (determined) middlebox in the same address realm as the entity

The answer to this question is YES. As shown in Xu Figure 1, the NATs are in the same address realm as the client entities.

2) Is the middlebox control node in a different address realm to that of the entity

The answer to this question is YES. As shown in Xu Figure 1, the CCM server [*middlebox control node*] is in a different address realm as the client entities.

3) *Is the middlebox identity providing node separate from the middlebox control node;*

The answer to this question is YES. As shown in Figure 1 by Sollee, the media portal [*middlebox identity providing node*] is separate from the control nodes [application servers] for the client entities. Thus the combination of Xu,Huitema and Sollee disclosed wherein *the middlebox identity providing node must be separate from the middlebox control node*

4) *Is the identity of the middlebox sent to the middlebox control node*

The answer to this question is YES. The Examiner presents prior art by Sollee disclosing a media portal that provides *the IP address of the public side of the NAT*, and propagates the NAT public address to an application server for call setup. Thus the combination of Xu,Huitema and Sollee disclosed wherein *the identity of the middlebox sent to the middlebox control node*

5) *Is the middlebox identity providing node located in a control signal path from said entity to the middlebox control node*

The answer to this question is YES. As shown in Sollee Figure 5, the media portal is found along the signal path from said entity to the application server.

The Examiner notes that the Applicant Specifications indicate (Applicant Specifications Page 10) that '*In the case that the middlebox is a NAT the identity may*

be the IP address of the public side of the NAT, thus it would be obvious to person of ordinary skill in the networking art that the *middlebox-identity-providing node* is equivalent to any entity that provides *the IP address of the public side of the NAT*.

The Examiner presents prior art by Sollee disclosing a media portal that provides *the IP address of the public side of the NAT*, and propagates the NAT public address to an application server for call setup.

The Applicant presents the following argument(s) *[in italics]*:

The call control manager 'CCM' server 18 of Xu is neither a firewall or a NAT and is not a middlebox as this term can be reasonable construed in the context of both the present invention and Huitema for that matter

The Examiner notes that that, as presented in the prior rejection(s), said CCM server is being interpreted as a *middlebox control node*, not the middlebox itself.

The Applicant presents the following argument(s) *[in italics]*:

since the NAT/firewalls 32(a) and 32(b) operate to perform address translation in a conventional manner, there is no requirement to send control messages from a middlebox control node as required by claim 1 and thus no motivation to look to Huitema and/or Sollee.

The Examiner notes there is no requirement that the prior art provide the same

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reason as the applicant to make the claimed invention. As presented above, Xu, Huitema and Sollee are analogous art because they present concepts and practices regarding communication control for middlebox devices such as NATs and firewalls. It would have been obvious for Xu to search for other disclosures regarding communication control for NATs and firewalls such as Huitema and Sollee.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/G. B./

Examiner, Art Unit 2144

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144

Conferees:

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2151

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